In response to Applicants arguments of December 3, 2003, the Examiner asserts that the polycyclic aromatic groups assembled into an oriented parallel surface following deposition in Nakayama et al. would qualify as "self-assembling" in the present claims. The Examiner further asserts that the polycyclic molecules involved in the charge transfer complex described at column 3, line 40 through column 4, line 10 of Nakayama et al. would qualify as a "charge transfer material" of the present invention. Thus, the maintenance of the rejection appears to be based on the interpretation of the charge transfer material and its properties. Applicants traverse this rejection and withdrawal of the rejection is respectfully requested.

Interpretation of "charge transfer material" - The charge transfer material of the present invention forms a bond to a substrate surface and improves the charge injection between a metallic conductor and a semiconducting thin film, or alternatively blocks the charge injection to the semiconducting thin film, depending on whether the charge transfer material is a charge acceptor or donor and the semiconducting thin film is a charge donor or charge acceptor. Moreover, the charge transfer material of the present invention forms a bond to a conducting substrate, such as source and drain electrodes in a field effect transistor. These properties of the charge transfer material of the invention are reflected in the recited features of claim 1 that the charge transfer material:

a) comprises charge transfer components in the form of donors and/or acceptors,

b) forms a self-assembling layer of one or more atomic and/or molecular layers,

c) has a direct or indirect bond to the surface of the substrate, and

d) forms a charge transfer complex with an organic or inorganic semiconductor, wherein the charge transfer material forms a donor or acceptor material in the charge transfer complex depending upon respectively whether the semiconductor itself is an acceptor or donor material.

The charge transfer material of the invention may also be used for controlling the effective length of the transistor channel or applied as an insulating material outside the contact areas to improve the insulation of semiconductor devices and prevent undesired leakage currents.

The layer of polycyclic aromatic group molecules or a carbon layer having a graphite structure of Nakayama et al. is not tailored to possess the functional properties of the charge transfer material of the present invention. The polycyclic aromatic group molecules of Nakayama et al. function to control or improve the molecular orientation of an organic thin-film layer and hence differ from the charge transfer material of the present invention both with regard to properties and functionalities. According to Nakayama et al., the function of the charge transfer material particularly derives from the possibility of it having a controlled orientation, thus also beneficially influencing the molecular orientation of the thin-film material deposited thereon. Nakayama et al. further teach that a neutral-ionic transition of the complex thus formed effectively can be caused by an electric field applied between the contacting electrodes.

In the present invention, the charge transfer material is applied to the conducting surfaces or electrodes as depicted in fig. 3 and fig. 4. The embodiment depicted in fig. 5 may be considered to have a structural similarity to fig. 3 of Nakayama et al.; but the embodiment of fig 5 of the specification remains functionally different from Nakayama et al.

Similarly, in the embodiments shown in figs. 6 and 7 of the present invention while there is some structural similarity with Nakayama et al. the function remains different. The embodiment in fig. 6 of the specification functions to block a charge transfer in a portion of the channel region of a field-effect transistor, thus shortening the effective channel length. Similarly in fig. 7 the charge transfer material 3 is provided on a substrate 4, again with insulating purposes in mind. Hence in the embodiments in figs. 3-5 of the specification the charge transfer material 3 is provided for the purpose of improving charge injection, while in embodiments in figs. 6 and 7 it is provided for blocking charge injection. The charge transfer material 3 is provided directly on the contact surfaces in the embodiments in figs. 3-5 and on an insulating substrate for the opposite purposes in figs 6 and 7. No corresponding functions are disclosed in or suggested by Nakayama et al.

Thus, Nakayama et al. fails to disclose the present invention, whose function is reflected in the recited properties of the charge transfer material of claim 1 and withdrawal of the rejection is respectfully requested.

As the above-indicated remarks address and overcome the objections and rejections of the Examiner, withdrawal of the objections and rejections and allowance of the claims is respectfully requested.

Should the Examiner have any questions, regarding the present application, he is requested to please contact, MaryAnne Armstrong, PhD (Reg. No. 40,069) in the Washington DC area at (703) 205-8000.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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(Rev. 02/12/01)